



Bleeding and Thrombosis in Patients with Suspected or Confirmed Heparin-induced Thrombocytopenia: A 20-year Experience at Siriraj Hospital

Yotsathon Chantarawichian¹; Bundarika Suwanawiboon¹; Yingyong Chinthammitr¹; Theera Ruchutrakool¹; Tarinee Rungjirajittranon¹



¹Division of Hematology, Department of Medicine, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

INTRODUCTION

Heparin-induced thrombocytopenia (HIT) is a hypercoagulable condition associated with a high risk of thrombotic events. However, patients may still face bleeding complications, despite the thrombotic risk. While most studies concentrate on thrombosis, bleeding is often underreported, especially within the Asian population.

AIM

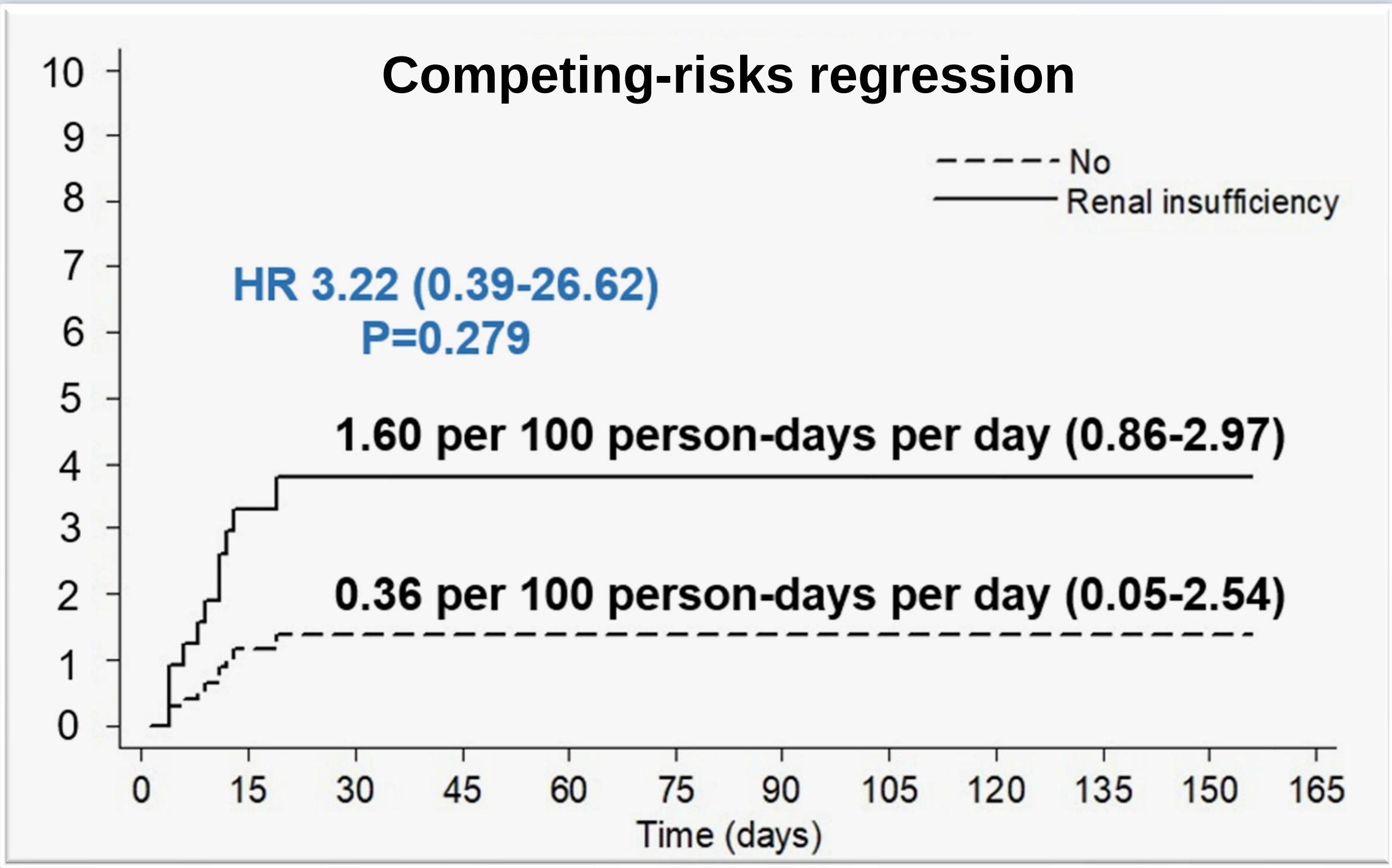
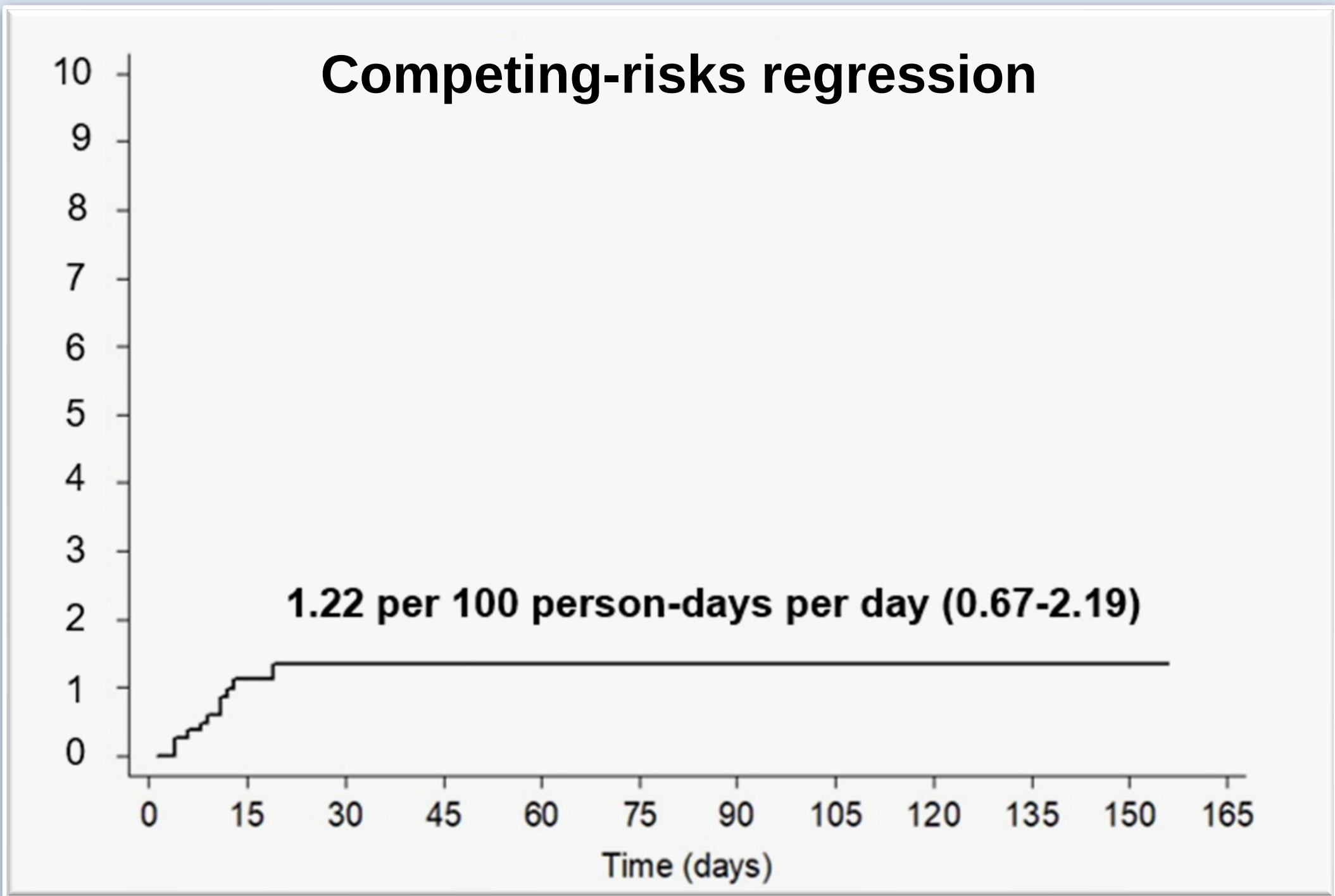
To assess the incidence of bleeding and thrombotic complications and identify factors associated with the outcomes

METHOD

We conducted retrospective and prospective cohort studies on patients with suspected or confirmed HIT at Siriraj Hospital from January 2004 to December 2024.

RESULTS

A total of 41 patients were enrolled, with a mean age of 66.8 years and a comparable male-to-female ratio. Sixteen (39%) were admitted to the ICU, including 33 patients with confirmed HIT and 8 with suspected HIT (positive for either an immunoassay or the heparin-induced platelet aggregation test). Five patients had HIT with thrombosis. Among the 29 patients (70.7%) with renal impairment, 13 had newly diagnosed acute kidney injury (AKI), and 16 had pre-existing chronic kidney disease (CKD), 14 of whom developed AKI during admission. Treatments included 25 patients receiving fondaparinux (62.1% in the renal group and 58.3% in the non-renal group), 5 receiving regional citrate (all in the renal group), 1 receiving warfarin, and 10 who did not receive anticoagulation. The mortality rate was 29.3%, with one patient without anticoagulation developing a pulmonary embolism.



Cumulative incidence of bleeding events

Factors	Crude Hazard Ratio (95% Confidence interval)	P-value
Pre-existing renal disease	2.78 (0.84- 9.26)	0.095
Renal impairment (any types)	3.22 (0.39-26.62)	0.279
Mode RRT		
No RRT	Reference	
I-HD	0.58 (0.06- 5.57)	0.636
SLED	4.60 (1.50-14.09)	0.008
CRRT	1.66 (0.44- 6.26)	0.458
ICU Admission	1.57 (0.64- 3.81)	0.322

Univariate analysis of factor associated with all bleeding (competing risk: all cause death) at HIT diagnosis to event duration (n = 41)

Overall, the bleeding incidence was 1.22% per day, with 26.8% of patients (11/41) experiencing bleeding. Focusing on bleeding patients, 10 out of 11 had renal impairment. The incidence was comparable between patients with confirmed and suspected HIT, with rates of 24.2% and 37.5%, respectively (P = 0.658). Seven of the 11 patients had major bleeding according to ISTH criteria. Among fondaparinux-treated patients, 28% (7/25) experienced bleeding events, nearly all of whom had renal impairment. Factors associated with bleeding included pre-existing CKD (HR 2.78, P = 0.095) and SLED treatment (HR 4.60, P = 0.008).

CONCLUSIONS

Our study highlighted a high bleeding risk in HIT patients, especially those with renal complications. Tailored management strategies are essential, particularly in regions with limited access to renal-safe non-heparin anticoagulants.

ACKNOWLEDGEMENTS

I would like to express my gratitude to my research advisers for their valuable suggestions, help, and support throughout the duration of this research.

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